

32. Supply system for the delivery of first configured elements for use in manufacturing operations to one or more manufacturing systems comprising :

A | a basic supply module including a supply chamber for storing elements and a forwarding device proximate to said supply chamber and positioned to receive elements from an output of said supply chamber for moving elements from said supply chamber; and

a first interchangeable mechanical sorting device of the type providing a continuous sorting of elements for producing a continuous element stream, said interchangeable mechanical sorting device located proximate to said forwarding device and positioned to receive the elements from said forwarding device, said first interchangeable mechanical sorting device being configured for receiving and sorting the first configured elements from said forwarding device and delivering only correctly positioned ones of the first configured elements to a transport device of the type providing a continuous flow of elements to a manufacturing system for transporting correctly positioned ones of first configured elements to the manufacturing system wherein:

said first interchangeable mechanical sorting device is removeably mounted on said basic supply module and mechanically affixed thereto with a rapid disconnect coupler, and further wherein said first interchangeable mechanical sorting device is readily replaceable with a like second interchangeable mechanical sorting device configured for sorting and supplying second configured elements.

33. The supply system according to Claim 32, wherein said first interchangeable mechanical sorting device is configured to concurrently sort at least two dissimilarly configured elements.

34. The supply system according to Claim 32, wherein said supply module includes at least two supply chambers, each of said supply chambers for receiving a differently configured element to be sorted.

35. The supply system according to Claim 32, wherein said supply chamber receives therein a mixture of dissimilar elements to be sorted.

36. The supply system according to Claim 35, wherein said forwarding device simultaneously delivers the mixture of elements to said first interchangeable mechanical sorting device.

37. The supply system according to Claim 32, wherein said basic supply module is affixed to a mobile installation platform.

38. The supply system according to Claim 37, said mobile installation platform includes functional components affixed thereto including:

- an electrical control cupboard including a display device;
- a pneumatic supply;
- an oiling device; and
- at least one safety protection device.

39. The supply system according to Claim 38, wherein said control cupboard further includes:

- a main power connection;
- input and output units;
- a programmable control for controlling operation parameters including the on/off switching of said forwarding device, regulating the speed of said forwarding device, regulating the supply pressure to said transport device, and regulating the pressure of said oiling device;
- a recognition device for recognizing said functional components affixed to said basic supply module;
- input connections for receiving system status signals; and

at least one connection line for connecting to the manufacturing system to facilitate communication between said supply system and the manufacturing system.

40. The supply system according to Claim 32, further including a pneumatic supply.

41. The supply system according to Claim 32, wherein said basic supply module includes an oiling device for applying oil to the elements to be sorted.

42. The supply system according to Claim 32, wherein said forwarding device includes acoustic insulation.

43. The supply system according to Claim 32, wherein said forwarding device includes a safety device cover preventing access to said forwarding device during operation thereof, and a switch activated by said cover such that when said cover is opened said switch operates to deactivate said forwarding device.

44. The supply system according to Claim 32, wherein said system includes a plurality of interchangeable mechanical sorting devices.

45. The supply system according to Claim 44, wherein said forwarding device is oriented to receive like ones of first configured elements from said supply chamber and to distribute the like elements to be sorted to all of said interchangeable mechanical sorting devices.

46. The supply system according to Claim 44, wherein said forwarding device is oriented to receive a mixture of dissimilar elements from said supply chamber and to distribute the dissimilar elements to be sorted to all of said interchangeable mechanical sorting devices.

47. The supply system according to Claim 32, wherein said supply chamber includes convergent sidewalls terminating at a low point of said supply chamber and having at said low point at least one opening for permitting the passage therethrough of the elements to be sorted.

48. The supply system according to Claim 32, wherein each of said interchangeable mechanical sorting devices when affixed to said basic supply module are further interconnected to said basic supply modules with an electrical connection for electrical communication therebetween and a pneumatic connection for pneumatic communication therebetween, and further wherein said electrical and said pneumatic connections are facilitated with rapid disconnect connectors.

49. The supply system according to Claim 32, further including a transport module for selective mating with and independent movement from said basic supply module to facilitate the removal and the installation of said interchangeable mechanical sorting device on said basic supply module.

50. The supply system according to Claim 49, wherein:  
said basic supply module includes a set of rails thereon;  
said transport module includes a set of rails thereon; and  
when said transport module is mated to said basic supply module, said sets of rails are in alignment such that said interchangeable mechanical sorting device is translatable along said rails to selectively reposition said interchangeable mechanical sorting device between said basic supply module and said transport module.

51. The supply system according to Claim 50, wherein said transport module includes a turntable upon which said set of rails is mounted, said turntable and said set of rail are of sufficient size to support two of said interchangeable mechanical sorting devices therealong, and

said turntable is functional to rotate at least 180 degrees about a vertical axis in a substantially horizontal plane.

52. The supply system according to Claim 51, wherein said transport module includes a latch to secure said transport module to said basic supply module when said respective sets of rails are in alignment.

53. The supply system according to Claim 32, wherein:  
said basic supply module includes a single supply chamber; and  
a plurality of interchangeable mechanical sorting devices and a plurality of transport units adapted to feed the same type and size of elements supplied by said forwarding device from said single supply chamber.

54. A method for the operation of a <sup>system by a user</sup> ~~user~~ which receives elements from a supply system of the type comprising a basic supply module including a supply chamber and a forwarding device, and an interchangeable mechanical sorting device including a sorting device and a transport device affixed to the basic supply module, and functioning to sort elements in a desired predetermined element position to change the supply system from sorting a first configured element to sorting a second configured element, said method comprising the steps:

disconnecting the interchangeable mechanical sorting device from the basic supply module;

removing the interchangeable mechanical sorting device configured to sort the first configured elements from the basic supply module;

placing another interchangeable mechanical sorting device configured to sort the second configured elements on the basic supply module;

aligning the other interchangeable mechanical sorting device with respect to the forwarding device of the basic supply module; and